



Great Explorations

CALIFORNIA ACADEMY OF SCIENCES 2011 ANNUAL REPORT

Explore Explain Protect

*Journeys of discovery, big and small,
in and around our own backyard.*



PHILIPPINE
EXPEDITION TEAMS

TERRESTRIAL /
FRESH WATER
DEEP WATER
SHALLOW WATER



2011 Expeditions Around the Globe



Academy scientists have been working to discover and document biodiversity around the world for nearly 160 years—work that is becoming increasingly urgent as global extinction and habitat destruction rates rise. In 2011, they traveled to some of the least-studied and most biodiversity-rich regions in the world, from the deep waters off the coast of the Philippines to the mountains of Columbia. Their efforts to create a more comprehensive picture of life on Earth will help to inform future conservation decisions across the planet.

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Charles Griswold

GERMANY
Zeray Alemseged

SICHUAN, CHINA
Peter Fritsch

JAPAN
Tomio Iwamoto

EGYPT
David Blackburn

YUNNAN, CHINA
Brian Fisher
Peter Fritsch

TAIWAN
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* Indicates partners not employed at the Academy.



What drives us to discover?

Perhaps it's an impulse in our DNA. Call it curiosity: Throughout history, it has caused humans to overturn rocks and scale mountains, climb trees and trek through forests, dive deep and set out for shores unknown.

This grey reef shark was photographed by Academy scientist Luiz Rocha during an expedition to the Marshall Islands.

For nearly 160 years, curiosity has driven the California Academy of Sciences to discover and document life on Earth. But curiosity isn't our only motivation. The Academy's mission to explore, explain, and protect the natural world grows from an increasing sense of urgency. As oceans warm and forests recede, species are vanishing faster than they have in 65 million years, in some cases before we can even name them. Many of these life forms—pollinators, oxygen producers, soil servicers, potential sources of medicine—may be crucial to healthy, functioning ecosystems and the future success of our species.

The urgent need to understand the vast web of life before it disappears inspires the Academy to undertake what we call Great Explorations. These journeys of discovery, big and small, deliver the “Wow!” and the wonder for which the Academy is known worldwide, fueling both a passion for learning and a deeper appreciation for the natural world. They also address questions about life and its sustainability that are essential to our very survival, revealing answers that will guide our decisions as we steward this planet.

As you'll learn through this annual report, 2011 at the Academy was full of journeys of inquiry. Some took us to faraway forests and distant shores. Others opened minds to intriguing life forms and the tools of science, right here in Golden Gate Park. Some even expanded the boundaries of science education and our known Universe—

exploring life at its most minute. Expeditions like these, in which each discovery sparks further curiosity and discovery in a perpetual cycle of self-education—are the ultimate expression of the Academy's mission. They are also cause for optimism in urgent times, because they equip people of all ages with a formidable resource: a science-literate brain. Understanding science prepares us to live creatively, to pursue meaningful work, to contribute to our communities. It shapes our judgment as, together, we manage shared resources—air, water, forests. It enables us to follow wherever curiosity leads, and to learn along the way.

In the year ahead, the Academy will continue to explore far and wide. We envision 365 days shaped equally by curiosity and urgent concern, in which science partners with passion for the natural world, and people—enlightened by what they experience at the Academy—step up to protect our shared natural legacy. This is the mission your gifts to the Academy make possible. It is no exaggeration to say that the future depends on it.

GREGORY C. FARRINGTON
EXECUTIVE DIRECTOR

William R. and Gretchen B. Kimball Chair
California Academy of Sciences

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Great Explorations Across the Academy

Activities across the Academy in 2011 epitomized both the “Wow!” and the “Why?” that drive great explorations. More than a million visitors from around the globe came to experience 38,000 living creatures—hailing from the depths of the ocean to the rainforest treetops—plus eye-opening exhibitions revealing the myriad mysteries of Planet Earth. But 2011 was also about future-shaping conversations, such as when policymakers, scientists, and citizens convened for the Governor’s Conference on Extreme Climate Risks and California’s Future, as well as the BLUEMIND Summit, which explored the connection between the human brain and Earth’s oceans.



*Lemondrop, an albino
reticulated python, and
more than 60 other new
reptiles charmed visitors
during Snakes & Lizards:
The Summer of Slither.*





Four Seasons of Discovery

Not all great explorations require extreme treks or elaborate planning. Sometimes, you just need an open mind and a visit to the Academy, any time of year.

During the *Spring to Life* exhibit, one could explore creativity in many forms: live chicks hatching in the Piazza, eggs and nests from the Academy's research collection, an artist making animal sculptures from used cardboard—a window onto how recycling protects forested ecosystems. A summer visit found visitors in slinky company when more than 60 new scaled reptiles took up residence in the Academy. The popular *Snakes & Lizards: The Summer of Slither* exhibit revealed the amazing adaptations of squamates—legged and legless lizards that are among Earth's most successful vertebrates. With their curious forms of locomotion and beautiful camouflage, they shared fascinating lessons in evolution and sustainability.

Fall and winter brought indoor snow flurries, a spice forest of aromatic specimens—cinnamon, nutmeg, vanilla—live reindeer, and a host of family activities exploring the science behind popular holiday traditions. And, making discovery a yearlong activity, the Academy featured its Project Lab in 2011. Every day, scientists bring public-floor visitors closer to the research that is central to the Academy's mission with specimen show-and-tell sessions and live demonstrations of science in action.

During the Snakes & Lizards exhibit, special daily programs in the piazza allowed visitors to dive deeper into the world of these scaled reptiles.

HIGHLIGHTS

Across the Academy

In November, an 18-foot orca washed ashore near McClures Beach. Maureen Flannery collected data to help identify the cause of death and augment our understanding of the region's orca population.

JANUARY 12
Academy scientist Maureen Flannery gave a lecture about the museum's participation in the Marine Mammal Stranding Network, a federal program designed to study and assist sick, injured, and stranded marine mammals.

The Academy houses the world's largest collection of marine mammal skulls, which are used to study everything from evolution to marine pollutants.



A TEACHING TOOL, A LEARNING ENVIRONMENT

A masterpiece of innovative, green design and inventive, eco-aware exhibitry, the Academy building is the ultimate sustainability teaching tool. Since opening day in 2008, the world has taken notice of the living hillscape of a roof, recycled denim insulation, and many other features that earned the Academy its first Leadership in Energy and Environmental Design (LEED) Platinum award. Three years and more than five million visitors later, the U.S. Green Building Council presented the Academy with a second LEED Platinum award—this one for sustainable operations, creating the world's first “Double Platinum” museum and the largest “Double Platinum” building. A commitment to sharing information on sustainability with the public and including green-building messages in Academy exhibits helped secure the honor.



Academy scientist Dr. John McCosker served as a scientific advisor for team that drafted the shark-finning legislation.

FEBRUARY 14

At an Academy press conference, California State Assembly members Paul Fong and Jared Huffman introduced a new bill to protect sharks. Called AB 376, it proposed banning the possession, sale, trade, and distribution of shark fins in California. Academy members signed a petition of support.

On October 7, Governor Jerry Brown signed AB 376 into law, a major victory for both sharks and their ecosystems.

In 2010, Dr. Alemseged's work in Ethiopia unearthed evidence that human ancestors were using stone tools and consuming meat from large mammals nearly a million years earlier than previously documented.

Dr. Alemseged's research was featured in the recent PBS series on human origins, *Becoming Human*.

MARCH 7

Academy scientist Dr. Zeray Alemseged gave a lecture about the history of human tool use, sharing new evidence that Lucy's species, *Australopithecus afarensis*, used stone tools and consumed meat.

A NIGHT OF WONDERLUST

What happens when modern-day pioneers join forces in support of an institution dedicated to perpetual exploration and discovery? As more than 700 people experienced firsthand the evening of May 5, the result is a Big Bang that reverberates in the lives of everyone who was there to hear it and beyond, among the thousands of students who benefited from the Academy's education and research programs in 2011. Attendees contributed their vision, insight, imagination, and sense of humor to bring the Explore theme of 2011's Big Bang Gala to life. Their participation helped to attract explorers and philanthropists of all kinds and made for a fascinating, only-at-the-Academy conversation. The event, co-chaired by Randi Fisher and Wendy Schmidt, raised more than \$1.9 million for Academy education and research efforts, providing an immeasurable difference in the lives we have shaped, through science and wonder, over the past year.



THERE'S AN APP FOR THAT

iPhone plus Academy equals great exploration—thanks to the Academy Insider app, introduced in 2011, which lets visitors follow their curiosity to ever-deeper levels of engagement with the Academy's explore-explain-protect mission. Get insider information, quizzes, fun facts, and interactive maps on exhibits throughout the Academy. Tap into daily program feeds. Ask a naturalist probing questions about the world. Customize an Academy itinerary to specific interests. Then, take the learning experience home with you, all in the palm of your hand. With the Academy Insider app, discovery is just a click, a tap, a slide, or a pinch away—and you don't have to miss a thing. The Academy Insider app is available for free from the App Store.

Great Explorations Beyond the Classroom

At the Academy, discovery is a total-immersion experience that enables you to pursue your personal science passion. Such informal learning is key to capturing young minds early, and it will be essential to cultivating the next generation of science, technology, engineering, and math (STEM) professionals. With programs for all ages and a strategy to expand science education after school and during the summers, the Academy is leading great explorations beyond the classroom.



High school interns in the Academy's Careers in Science program work alongside museum scientists, learning how to prepare scientific specimens like this longhorn beetle.



Redefining the "School Day"

Despite dramatic advances in technology and growing demand for a science-savvy workforce, Americans are receiving fewer advanced degrees in science than they were 30 years ago. And the deficit begins before college: California students consistently test second-to-last in the nation in science proficiency.

The Academy aims to change the equation with several new initiatives that engage students in science during out-

of-school hours. In 2011, through Science Action Clubs, students at two San Francisco middle schools planned and conducted their own experiments, gathered data through real research, and shared their findings—on Ocean Beach litter and community gardening—with their school communities. The program will expand to eight schools in 2012.



Students in the Academy's Careers in Science intern program create and use demonstration carts to teach visitors about everything from parasites to the clues we can glean from skulls.

Other programs planned in 2011 will launch in the years ahead. Through Pearson Young Scientists, 30 young apprentices will work side-by-side with Academy science professionals on research, educational programs, exhibit design, and media production. Specially trained TASC Force (Teen Advocates for Science Communication) youth will share their growing knowledge with the 1.5 million people who visit the Academy

annually. Participants in the Science in Action program will use digital media to create and share stories about conservation and the natural world. And Student Science Fellows—in grades 11 and 12 and already on a science path—will plan and carry out significant research projects worthy of peer-reviewed publication.

HIGHLIGHTS

Beyond the Classroom

APRIL 22-23

The Academy celebrated Earth Day by hosting a two-day festival filled with eco-friendly fun and innovative displays, including the debut of a new installation by artist Michael Bartalos entitled *Handle with Care*.

The Academy's "Green Guide" offers easy tips for sustainable living 365 days a year. Find it online at www.calacademy.org.

- In March, artist Michael Bartalos embarked on a month-long collaboration with Academy visitors to breathe new life into used cardboard through the creation of unique animal sculptures.



AFTER-HOURS ADVENTURES

"Best Steamy Date Night," "Best Place to Party like it's 1929," "Best Penguin Party"—these are just a few of the accolades earned by NightLife, a weekly after-hours event that has made the Academy a popular evening destination. Delivering an unexpected combination of entertainment and education, NightLife engages a new audience of young professionals with a different theme each week. 2011 brought Beatles & Beetles—early photographs of the legendary Brit Pop band and a look at the fascinating six-legged insects. Sustainable Catch night mixed seafood cooking demonstrations with ecologically aware interactive games and insights from the BLUEMIND Summit. And Sharktoberfest combined a local-brew beer garden in African Hall with renowned shark expert Dr. John McCosker in the Project Lab.



In April, the Academy launched the most comprehensive scientific survey ever conducted in the Philippines. Over the course of six weeks, scientists discovered over 500 new species.

MAY 19

Scientists Dr. Terry Gosliner and Dr. Rich Mooi were beamed into the planetarium dome via Skype to give the Academy's weekly NightLife audience a live update from the museum's landmark 2011 Hearst Philippine Biodiversity Expedition.

Since its inception, there have been 120 sightings of the invasive *Zoropsis spinimana* spider in the Bay Area by local residents.

JUNE 19

During a workshop for families called "Spiders and More," Bay Area residents became citizen scientists by learning how to collect and identify spiders in Golden Gate Park.

Academy educators accompanied the expedition to share the Academy's findings with local teachers, students, and policy-makers.

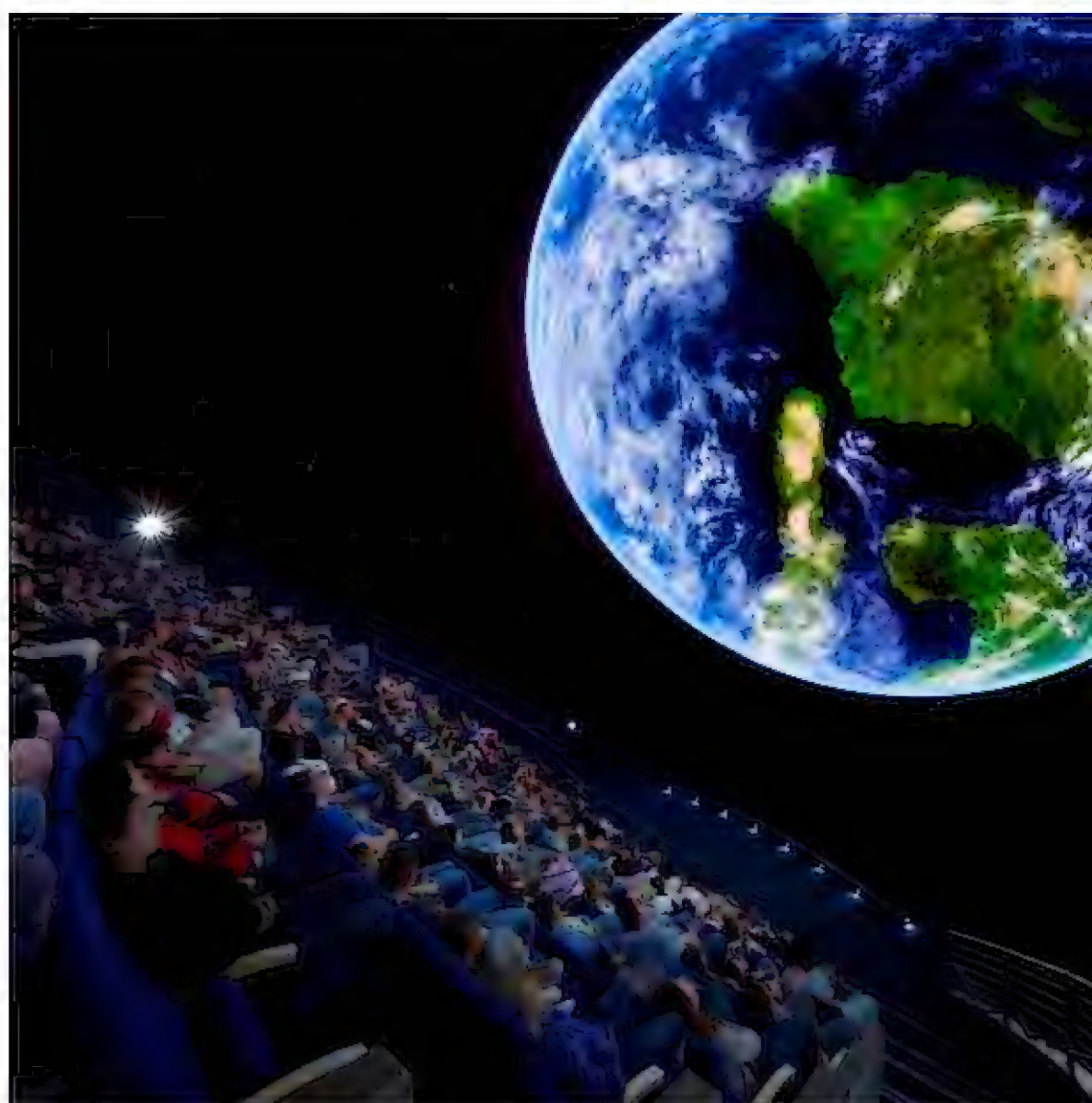
ASK ME FOR ANSWERS!



In 2011, a million and a half visitors followed their curiosity to the Academy. And 324 docents were there to transform their curiosity into knowledge. Leading special tours; sharing specimens and insights into aquatic life, evolution, and sustainability; helping guests interact with and understand sea stars, hermit crabs, and other denizens of the Discovery Tidepool--docents are the Academy's frontline educators. Last year alone, docents received nearly 200 hours of training and continuing education, making them powerful ambassadors for the natural world. By sharing their passion, curiosity, and growing knowledge, they inspire visitors of all ages to ask questions, dig deeper for answers, and even live differently in an effort to protect Earth's web of life.

FROM GOLDEN GATE PARK TO THE WORLD

In 2011, the Academy sent audiences from Athens to Tokyo, from Hawaii to Helsinki, on great explorations by distributing two of its renowned planetarium shows to science institutions around the globe. A 30-minute journey from Earth to the outer reaches of the Universe and back, *Fragile Planet* underscores the Academy's message that the "third rock from the Sun"—the only known haven for life—must be protected. *Life: A Cosmic Story* takes audiences on a trip through time, exploring key events since the Big Bang that set the stage for life. In 2011, the program was honored as "Best Fulldome Program" at the prestigious Jackson Hole Wildlife Film Festival.



Great Explorations Around the Globe

For nearly 160 years, finding and documenting Earth's life forms has been a core element of the Academy's mission. As threats encroach on habitats near and far, Academy expeditions—conducting and sharing research from the most critical hotspots on the planet—have become even more urgent. In 2011, Academy scientists described 140 new species from six continents and discovered hundreds more to study in years to come. By sharing their findings throughout and beyond the Academy, they help to cultivate a more scientifically literate global community.

A pair of ghost pipefish are perched on a dark, thorny branch against a deep blue background. The fish have a mottled pattern of white, yellow, and brown spots, which helps them blend into the branch. Their bodies are elongated and taper towards the tail. The branch is covered in sharp, dark thorns. The lighting is dramatic, highlighting the textures of the fish and the branch.

*During the Academy's
2011 Hearst Philippine
Biodiversity Expedition,
aquarium biologists
collected this pair of
ghost pipefish. Along
with several other
ambassadors now on
display in the aquarium,
they are opening visitors'
eyes to the beauty and
diversity of Philippine
reefs.*

An Expedition for the History Books

Members of the Academy's 2011 expedition to the Philippines prepare to head out on a night dive, a survey technique that allows scientists to document species that are only active after dark.

A “laughing” cicada, a driftwood-eating starfish, shell-less lobsters that live in crevasses, an “inflatable” shark ... these are just some of the fascinating new life forms discovered by Academy scientists during the 2011 Hearst Philippine Biodiversity Expedition.

The largest expedition in Academy history broke with tradition in more ways than one. It

was the most comprehensive scientific survey ever conducted in the Philippines. It uncovered more than 500 species that could be new to science—some so small they have never before been detected, others living in places rarely if ever visited by humans. 49 Filipino students and scientists brought multidisciplinary perspective to the endeavor. And for the first time, the team



included Academy educators, who regularly shared preliminary findings with local teachers, politicians, and conservation workers.

Although the Philippines is one of the most species-rich places on Earth—Academy Dean of Science and Research Collections Dr. Terrence Gosliner calls it one of “the hottest of hotspots”—the biodiversity there is relatively unknown. During

the six-week adventure, scientists surveyed reefs, rainforests, and ocean floor, discovering new species during virtually every dive and hike. The exhaustive species lists and distribution maps they have created—and their studies back in the Academy’s labs—will inform future conservation decisions and ensure the best chances of survival for the Philippines’ natural wonders.



HIGHLIGHTS

Around the Globe

Over the past decade, the Academy has sent more than a dozen scientific expeditions to China's Yunnan Province, one of the world's top biodiversity hotspots.

JULY 1
Academy botanist Dr. Peter Fritsch embarked on a month-long expedition to China in search of new species of wintergreens, shrubs that are related to blueberries and rhododendrons.

In addition to describing hundreds of new species from China, Academy scientists have also provided training for local forest service employees and Chinese students, helping to ensure that this biodiversity is protected.

SOLVING THE BLUE-FROG PUZZLE

A rare blue frog found in the montane forests of Burundi, in eastern Africa, is one of the particular passions of Dr. David Blackburn, the Academy's new Assistant Curator of Herpetology. The elusive creature has a close relative living thousands of miles away in the high-elevation forests of Cameroon. "How long ago did these two frogs share a common ancestor?" Dr. Blackburn wondered. In 2011, he traveled to Africa to find out. Using tissue samples collected in the field, he is conducting genetic tests on the two populations. The results could shed light on a time when forests stretched from the mountains of Burundi to those of Cameroon, and help identify current biodiversity hotspots for protection.



Academy scientist Dr. Brian Fisher collected dozens of Blinder beetles during a recent expedition to Madagascar. Because they live underground, very little is currently known about these bizarre bugs.

AUGUST 8

Before graduating from the Academy's annual Summer Systematics Institute, the 2011 class of college-level interns delivered presentations about their findings, including the discovery of 15 new species of Blinder beetles from Madagascar.

By blogging for the New York Times and chatting with Academy visitors via Skype, Dr. Dumbacher provided real-time updates on his progress during the expedition.

SEPTEMBER 3

Academy ornithologist Dr. Jack Dumbacher set sail on a two-month expedition through the islands of Milne Bay Province in Papua New Guinea in order to document both the islands' birds and their diseases.

Dr. Dumbacher has been studying the birds of Papua New Guinea for nearly 20 years. On one of his early expeditions, he discovered the world's first known poisonous bird.

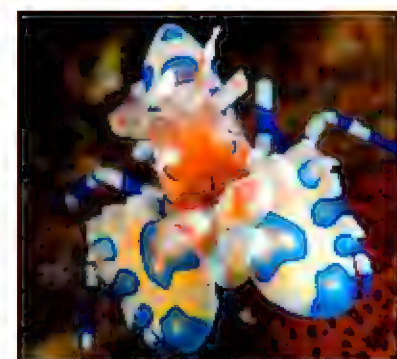
SUSTAINING CORAL POPULATIONS

As sea temperatures rise and parasites and disease spread, coral reefs—teeming with aquatic biodiversity—are in danger. In response, Academy biologists like coral propagation expert Bart Shepherd are participating in an international collaboration called the SECORE (SExual COral REproduction) project. While other groups clone new populations from coral fragments, SECORE is pioneering a sustainable technique that ensures greater genetic diversity. Scientists collect gametes from endangered coral species in the wild. Back in the lab they fertilize samples, with success rates close to 100 percent. The resulting juvenile corals are used to restore wild reefs, study reef biology, and create reefs for display in aquaria like the Academy's, allowing everyone to experience this endangered ecosystem.



BLUE OCEANS, GREEN SOLUTIONS

Oceans cover 71 percent of Earth's surface. Yet less than one percent is currently protected. Academy Fellow Dr. Sylvia Earle, an ocean explorer so revered she's been dubbed "Her Deepness," is working to protect more. In 2011, Dr. Earle—2009 TED Prize Winner—co-founded OceanElders, an independent group of global leaders who use science, data, and their collective influence to promote ocean conservation. The team is developing a web-based network of regional OceanElders groups. Their goal: Raise awareness on a scale never seen before and turn "hot spots" into "hope spots"—marine protected areas big enough to save and restore the ocean. "There is no green if we don't take care of the blue," Dr. Earle says.



Great Explorations Into the Unknown

In an era when you can spy your spot on Earth from space over the Internet, it may seem that the golden age of exploration and discovery has passed. But with an estimated 90 percent of life on Earth still undocumented, nothing could be further from the truth. The depths of the ocean, the smallest forms of life, the secrets embedded in DNA: These are our frontiers, little-known realms that are the target of several of the Academy's great explorations.



Microbes, like this avian flu virus, have many implications for human health, economic growth and environmental stewardship, yet we currently know relatively little about them.

A woman with dark hair, wearing a white lab coat, is focused on her work in a laboratory. She is using a blue and white pipette to transfer liquid into a multi-well plate. In the foreground, there is a yellow multi-well plate and a red one. To her left, a blue rack holds several test tubes. The background shows shelves with various laboratory glassware and equipment. The lighting is bright, highlighting the scientific environment.

Investigating the Smallest Life Forms

Most people would do anything to avoid mosquitoes. Dr. Shannon Bennett, head of the Academy's new Department of Microbiology, seeks them out. The humble mosquito is the living laboratory in which she studies some of Earth's smallest life forms, including the mosquito-borne virus that causes deadly dengue fever. Dr. Bennett is especially interested in genetic mutations that enable viruses

to cause epidemics or adopt new hosts.

Microbes constitute a huge percentage of Earth's biodiversity, yet scientists know little about them. "We've learned enough to know they have many practical applications for human health, agriculture, and environmental stewardship," says Dr. Bennett. Some microbes naturally perform complex biochemical transformations that can

A photograph of a laboratory environment. In the foreground, there are several clear plastic bottles with blue and orange caps, some containing liquids. In the background, there are wooden shelves and various pieces of laboratory equipment, including a large glass bottle and some tubing. The lighting is bright, and the overall scene is clean and organized.

clean up gasoline leaks, oil spills, sewage, nuclear waste, and other hazardous pollutants. Others create byproducts—hydrogen, methane, butanol—that are potential sources of renewable energy.

Because we have 10 times more bacteria in our bodies than human cells, microbes play a significant role in human health. They help us digest food and provide protection against

pathogens. And hundreds of drugs available today were derived from chemicals first found in microbes. The study of microbial communities, ongoing at the Academy, holds great potential for developing new ways to diagnose, treat, and prevent disease.

Dr. Bennett uses DNA sequencing to study mosquito-borne pathogens like dengue fever.

HIGHLIGHTS

Into the Unknown

OCTOBER 4

Academy Fellow

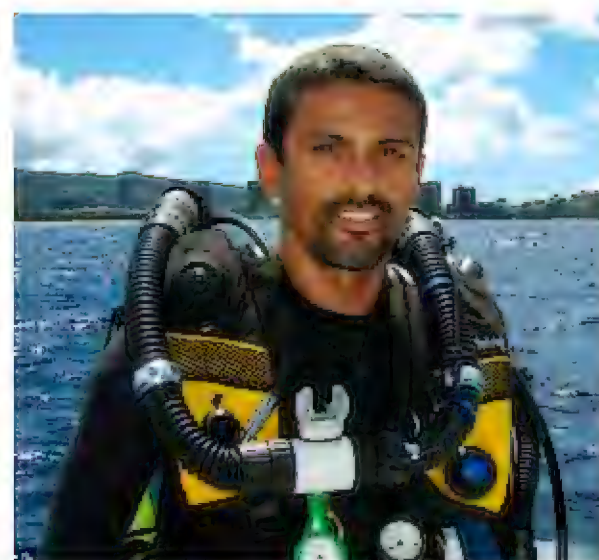
Dr. Steve Palumbi gave a lecture about his efforts to design marine parks that support conservation priorities. Palumbi's lab uses new genetic research techniques to study the evolution and resilience of marine species.

In January, Palumbi traveled to the South Pacific island of Ofu to study the region's "super corals," species that can survive unusually high water temperatures.



ENTERING THE TWILIGHT ZONE

You needn't visit another dimension to find the "twilight zone." Using a special diving technology called mixed-gas rebreather, Dr. Luiz Rocha, the Academy's new curator of ichthyology, is exploring a realm 200 to 500 feet below the ocean's surface—deeper than scuba divers go, but too shallow for deep sea research. Little is known about this zone and its deep coral reefs, which support hundreds of species of fish and invertebrates. Ecosystems in this realm also offer benefits to humans, from tourism to buffering against storms and currents. Off the coast of Florida, Dr. Rocha is exploring the ecological role twilight-zone reefs play in the replenishment of shallow coral ecosystems, generating information that can be used to develop coral conservation strategies.



During another Bay Area Science Festival event at the Academy, neuroscientists Dr. David Eagleman and Dr. Henry Markram discussed efforts to create a complete computer model of the human brain.

NOVEMBER 1

As part of the Bay Area Science Festival, Academy trustee Susan Desmond-Hellmann joined a panel discussion at the museum about the latest efforts to treat and cure cancer.

The festival's kick-off event was held during the Academy's weekly NightLife program.

On an expedition to the Solomon Islands, Dr. Williams discovered the first example of a bioluminescent soft coral.

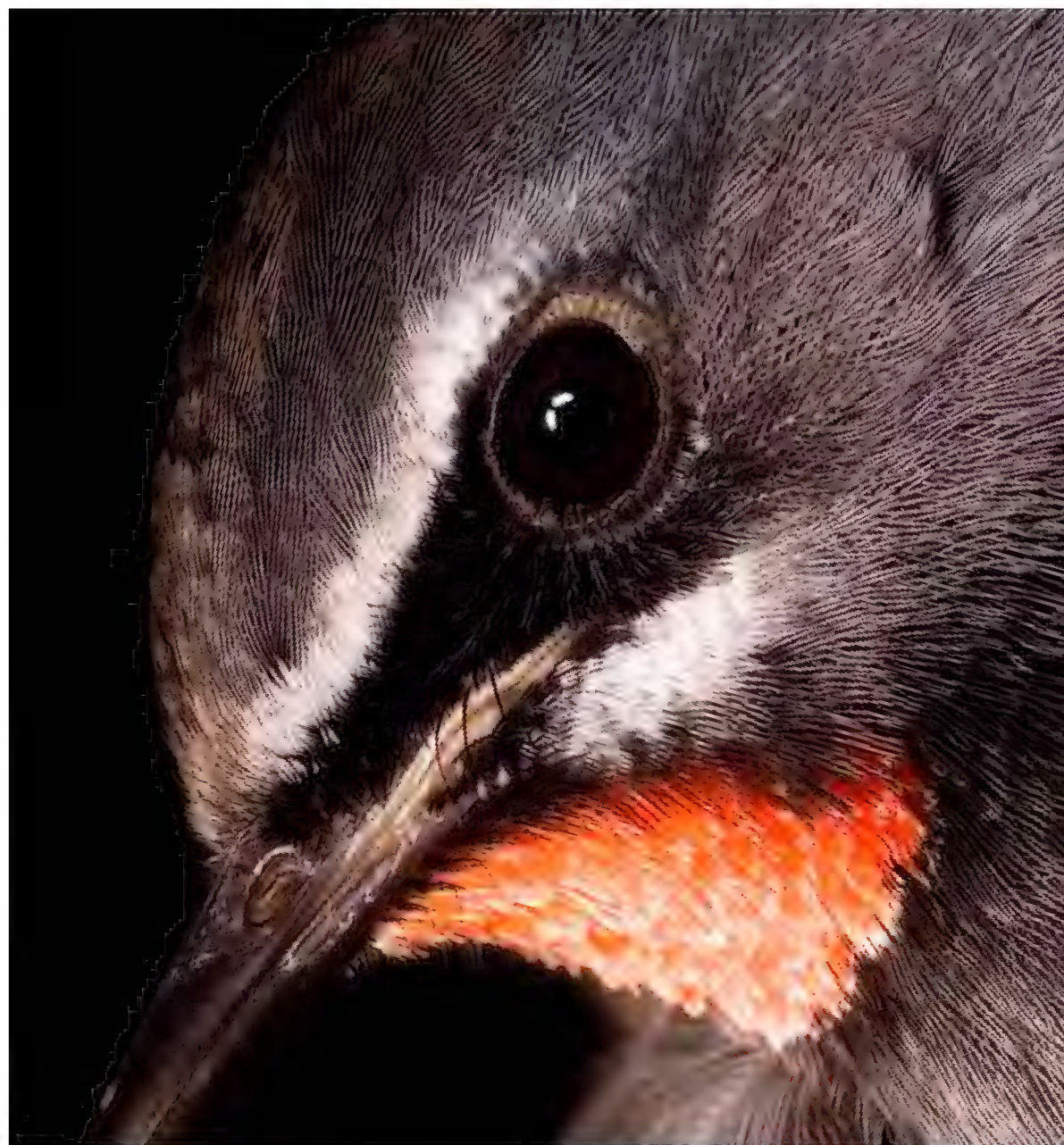
DECEMBER 2-5

Academy scientist Dr. Gary Williams participated in the first International Marine Conservation Think Tank in New Zealand, designed to address deep-water marine conservation issues.

One of the world's leading experts on deep sea corals and their relatives, Dr. Williams has described dozens of new species of these denizens of the deep.

NEW FRONTIERS IN HUMAN HEALTH

After studying Papua New Guinea's birds for 20 years, Academy scientist Dr. Jack Dumbacher has turned his attention to 600 little-known islands in New Guinea's Milne Bay Province. Currently untouched by the H5N1 avian flu, these islands provide the perfect setting for studying the spread of disease between birds and humans. "Island birds are very susceptible to new illnesses," says Dr. Dumbacher. Analyzing blood and fecal samples collected in the field, he hopes to identify parasites and viruses that can be spread, for example, from domesticated chickens to wild birds, or from infected birds to people who eat them. When avian flu reaches New Guinea, the Academy will be able to study how it spreads more effectively than has been possible in other locations.



A MILESTONE IN GENETICS

One of the nation's largest and most diverse genomics projects, the Kaiser Permanente Research Program on Genes, Environment, and Health, reached its first major milestone in just 15 months during 2011. Led by Academy Fellow Dr. Neil Risch, director of the UCSF Institute for Human Genetics and co-director of the program, scientists have genotyped the DNA and analyzed the length of chromosome tips in 100,000 Kaiser Permanente members who agreed to participate. By providing high-quality, genome-wide genetic data on a large and diverse population, the project, funded by the National Institutes of Health, will accelerate research into cardiovascular disease, diabetes, cancers, mental health disorders, Alzheimer's disease, and other complex illnesses.



Great Explorations For the Future

With so much life to discover and so many questions to answer, the Academy's greatest explorations are still to come, and the 2011 Big Bang Gala gathered our community to celebrate the possibilities. Why support the California Academy of Sciences? Dr. Craig Venter, National Medal of Science winner and human genome pioneer, said it well: "Your best option for immortality is to do something really significant while you're alive." The Academy is honored to partner with generous and visionary friends who agree.



*Amidst these swirls
of gas and dust,
photographed by NASA's
Hubble Space Telescope,
new stars are formed.*

Donors

The Academy extends its deepest thanks to the philanthropists and partners who support its mission. Their generosity makes great explorations possible, today and in the future.

This list represents donors who made gifts between January 1 and December 31, 2011.

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“In my life I have been lucky to do a lot of exploring. My first big voyage, at age six, was also my first visit to the West Coast. I was amazed to see a snow-covered Mount Rainier in the middle of the summer! After driving along the coast to southern California, I enjoyed swimming in the Pacific Ocean for the first time. On the way home, we stopped in Arizona and experienced the thrill of the mighty Grand Canyon. The wide and wild beauty of the West will always be my very favorite exploration.”

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“When I learned the history of Hungary's cities of Buda and Pest--how they were united as Budapest by the construction of the great Chain Bridge in 1849--it became an ambition to see and walk that bridge for myself. My first visit was via Google Earth and my first walk across was this past summer. What I found was that it remains "The Bridge" despite wars and rebuilding, occupation, and more modern alternatives. This bridge is iconic of Hungarian pride and my photograph of it is iconic for the lessons it taught me.”

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“At age 11 my father took me on a scuba diving adventure in the Red Sea. It was my first BIG encounter with the wildness of the ocean. I was moved deeply by the intensity of its unique ecosystem rich in diversity of sea life and the complex underworld of the ocean. It left me wanting to make sure that we never let such dynamic ecosystems be put in jeopardy. The diversity and wildness of life is truly captivating to me and I hope to protect as much of what is left for my children and future generations.”

SUMMER TOMPKINS WALKER

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*Academy Fellow **John Hafern** recently discovered a new threat to struggling honeybee populations—parasitic flies that turn their hosts into “zombies,” eventually dooming them to death. Hafern sampled several dozen hives in the Bay Area and found that bees in three quarters of the hives had been infected by the tiny fly. The research will help scientists understand and address the puzzling collapse of honeybee populations across the country.*

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Earned Revenue	24,226,252	26,004,039
Contributions	15,302,491	14,866,897
Government Grants	5,677,727	5,363,622
Investment Income	12,932,617	7,144,207
Net assets released from restrictions	9,611,572	6,430,493

Total Revenue 67,750,659 59,809,258

Expenses	2011	2010
Research	12,212,698	11,620,782
Public Programs	21,044,506	15,394,445
Aquarium	13,749,040	14,156,520
Education	1,927,486	1,520,084
Development & Membership	4,986,620	5,115,197
Management & General	4,719,922	5,369,047

Total Expenses 58,640,272 53,176,075

Financial Position

Assets	2011	2010
Investments	182,534,195	156,601,006
Receivables	5,536,012	4,994,973
Other	1,184,125	1,064,827
Total Assets	189,254,332	162,660,806

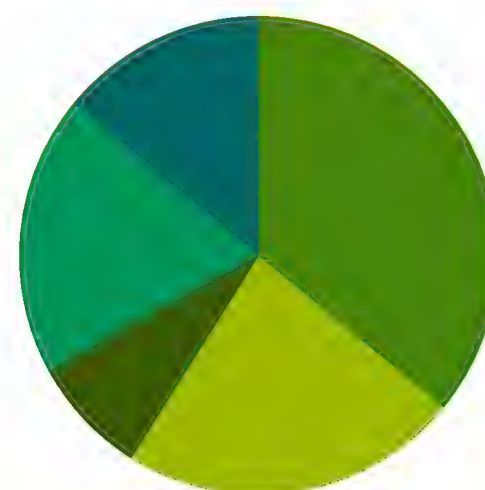
Liabilities		
Accounts Payable	5,999,370	5,488,524
Deferred Income	3,613,534	3,581,957
Other Long-term Liabilities	320,327	287,745

Total Liabilities 9,933,231 9,358,226

Unrestricted Net Assets	75,074,826	67,760,327
Temporarily Restricted	42,204,291	24,252,551
Permanently Restricted	62,041,984	61,289,702

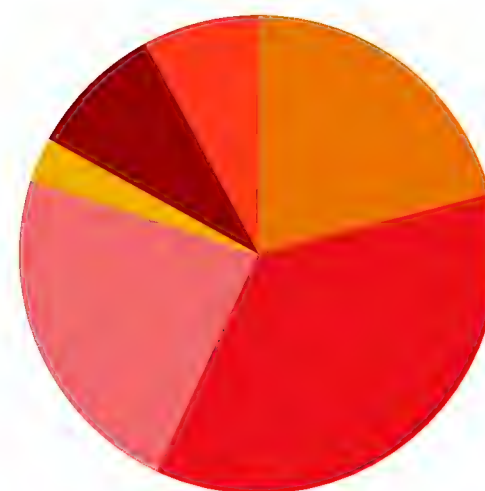
Total Net Assets 179,321,101 153,302,580

Total Liabilities & Net Assets 189,254,332 162,660,806



Revenue

- 36% Earned Revenue
- 23% Contributions
- 8% Government Grants
- 19% Investment Income
- 14% Net assets released from restrictions

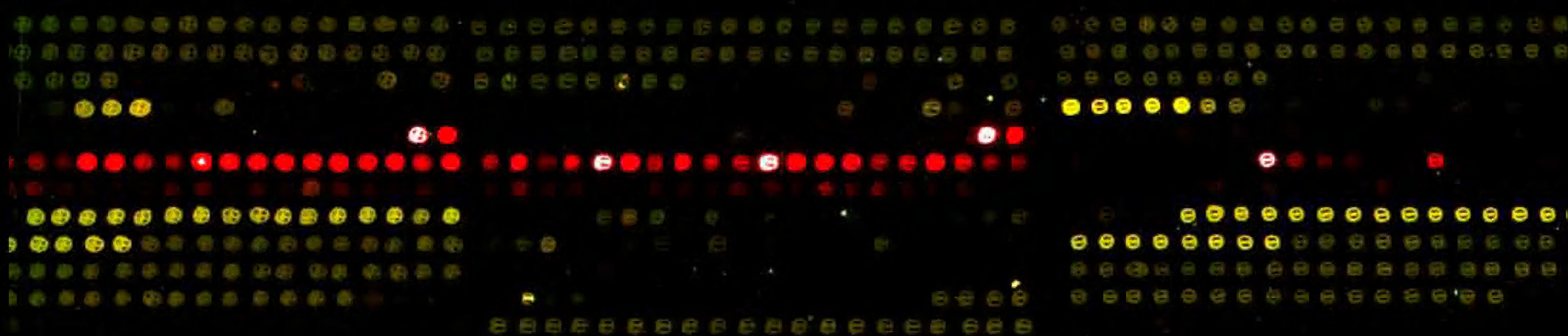


Expenses

- 21% Research
- 36% Public Programs
- 23% Aquarium
- 3% Education
- 9% Development & Membership
- 8% Management & General

Academy scientists use ViroChip scans like these to test wild bird populations for viruses like avian flu.

Represents financials from July 1, 2010–June 30, 2011.



Leadership

*Champions of discovery and science education,
Academy leaders bring vision, inspiration,
and direction to our mission to explore, explain,
and protect the natural world.*

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